

REMARKS

The Applicants respectfully request reconsideration and Allowance of Claims 1-10 in view of the amendments presented above and the following arguments.

The Applicants note that no notice of draftsperson's review was included in the Office Action mailed November 5, 2002. The Applicants thus assume that the drawings submitted are acceptable as formal drawings.

35 U.S.C. § 103(a) REJECTIONS

Claims 1- 8 were rejected under 35 U.S.C. § 103(a) as obvious over Schmid ,(US 5748810) in view of Tang et al. (Electronics Letters, 13th October 1994, Vol. 30, No. 21; Page 1758-1759).

STATUS OF THE CLAIMS

Claims 1- 10 remain pending in this case.

New Independent Claim 10 has been added which is old Independent Claim 5 amended to add the limitation of old Claim 9 which was deemed allowable if rewritten in independent form.

NEW INDEPENDENT CLAIM 10 IS ALLOWABLE AS INDICATED BY THE EXAMINER

The Examiner indicated that Claim 9 would be allowable if rewritten in independent form including all the limitations of the base claim, independent Claim 5, and any intervening claims of which there are none. The amendment above does this. As a result, New Independent Claim 10 is now allowable, as amended, in accordance with the Examiner's requirements.

CLAIMS 1 THROUGH 8 ARE NOT OBVIOUS IN VIEW OF THE CITED ART

The Examiner rejected Claims 1 through 8 under 35 U.S.C. § 103 (a), as being unpatentable over Schmid (US 5748810) in view of Tang et al. (Electronics Letters, 13th October 1994, Vol. 30, No. 21; Page 1758-1759). Applicants respectfully traverse these

rejections on the ground that there is no teaching or suggestion of Applicants' claimed device by the references and no suggestion in the prior art to modify the Schmid device as proposed by the Examiner. Furthermore, even if one made the modifications proposed by the Examiner, the resulting structure would not include all of the claim limitations set out in Applicants' claims.

THE SCHMID PATENT

The Schmid patent discloses a wavelength selective acousto-optical waveguide device wherein the optical polarization conversion is produced by an acoustic (sound) wave which propagates in and near the optical waveguide region (Column 8, lines 10-34). In the Schmid device, the optical frequency response of the filter is determined by the frequency of a radio frequency voltage waveform applied to interdigital electrode transducers (items 20 and 21 of Fig. 1; Column 8, lines 14-20) located remotely from the optical waveguides (items 15 and 16 of Fig. 1). For example, the acoustic control frequency can vary in the range of 174 ± 10 MHz (Column 8, lines 16-20).

The Examiner erroneously describes items 40-42 of Fig. 4 of the Schmid patent as "strain inducing strips". However, according to Schmid (Column 10, lines 8-11) items 40-42 are metal electrodes. A voltage applied to these electrodes (Fig. 4, items 40-42) does NOT tune the optical response of the filter.

THE TANG REFERENCE

The Tang reference, co-authored by the Applicants, is well known to them. The Examiner erroneously states that Tang teaches an offset of the positions of the strain-inducing strips by $\Lambda/2$ in two waveguides, with Λ the spatial period of the strain-inducing strips. Neither Figure 1 (See also Prior art Fig. 2 of the subject application) of Tang nor the accompanying textual discussion teaches or suggests such an offset or the presence of such an offset in the fabricated device.

Claim 1

In contrast, Applicants' independent Claim 1 (as well as independent Claims 5 and 10) claims a guided wave optical tunable filter which includes among other things an optical waveguide structure with an optical path difference (Element (b)), strain inducing strips (Element (c)) wherein the strain inducing strips are offset by $\Lambda/2$ (Element (c)) and

wherein the optical frequency response of the filter is determined by the amplitude of a dc voltage V applied to electrodes in close proximity to the waveguide (Elements (d) and (e)).

As pointed out above, Schmid does not teach or suggest Applicants' required strain inducing strips but only metal electrodes. A voltage applied to those electrodes does NOT tune the optical response filter. By contrast, a voltage applied to the electrodes of the Applicants' filters does tune the optical response. (See eg Figs. 5 and 7 of the subject application). Further, in contrast to Schmid as discussed above, the polarization conversion of Applicants' filter is produced by the strain inducing strips which are fixed material entities formed above the optical waveguide region. (See eg Figs. 5 and 7 of the subject application).

In further contrast to Schmid, the optical frequency response of the Applicants' filter is determined by the amplitude of a dc voltage V applied to electrodes in close proximity to the optical waveguides. In Schmid, the optical frequency response is determined by the frequency of a radio frequency voltage waveform applied to interdigital electrode transducers located remotely from the optical waveguides.

In contrast to Tang, Applicants' filter requires a $\lambda/2$ offset of the required strain inducing pads. Again, neither Fig. 1 of Tang nor the accompanying text teaches or suggests such an offset. Note that the Applicants specifically disclosed a Tang like filter in Figure 2 as prior art with no offset.

Applicants' respectfully submit that there is no suggestion in the prior art to combine the references so as to modify Schmid as proposed by the Examiner except for the Examiner's assertion that it would have been "obvious" to do so. Further, as set forth above, the limitations specifically required by Applicants' invention are in fact missing from the prior art references so that, even if one made the modifications proposed by the Examiner, the resulting structure would not include all of the claim limitations set out in Applicants' claims.

The Applicants therefore respectfully submit that independent Claim 1, as well as independent Claim 5, which requires limitations similar to those in Claim 1, are not obvious over Schmid in view of Tang and are entitled to allowance along with dependent claims 2-4 and 6-9 respectively.

CONCLUSION

In light of the above, Applicants respectfully request reconsideration and allowance of Claims 1-9 and new independent Claim 10. If the Examiner should feel that any issue remains as to the allowability of these claims, or that a conference might expedite allowance of the claims, the Examiner is asked to telephone the undersigned attorney.

Applicants intend this to be a complete response. No fee is believed due; however if a fee is due, please charge deposit account No. 19-1453 (File No.102-674).

Respectfully submitted,

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